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**Article Title:** The Impact of Alcohol Sponsorship in Sport Upon University Sportspeople

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## **Abstract**

An online survey was conducted to examine the alleged association between alcohol sponsorship of sports and Australian university sportspeople's (i.e., university students representing their university in competitive sports) alcohol consumption and attitudes toward sponsoring brands ( $N = 501$ ; 51% female). A third (33%) of participants reported receipt of alcohol industry sponsorship. Multiple regression analysis revealed an association between disordered consumption (i.e., alcohol abuse) and sportspeople receiving direct to user sponsorship in the form of product samples, volume club rebates, vouchers, or prizes. Positive attitudes towards alcohol sponsorship in sport correlated with dangerously excessive (i.e., “acute”) drinking. The evidence suggests that policy makers, sporting organizations and universities target specific sponsorships and consumption outcomes, rather than considering an overall ban on alcohol industry sponsorship in sport. Results suggest that student-targeted policy and governance alternatives directed at team culture, attitudes toward alcohol and more subtle forms of sponsorships (i.e., discounted product and vouchers) may be appropriate.

**Keywords:** Sport sponsorship, Public policy, Athlete perceptions, Consumption

Alcohol has been named the most abused drug in collegiate sport by the National Collegiate Athletic Association (NCAA) and in professional and Olympic sports by the National Basketball Association (NBA) the National Football League (NFL), and United States Olympic Committee (Glassman et al., 2013). Despite some sporting organizations invoking anti-drug taking policies and enforcement, studies find that sportspeople are more likely to engage in binge drinking (i.e., six or more standard drinks per sitting) than their non-athletic peers (e.g., Baer, 2002). Much research has examined the influence of alcohol industry advertising upon young drinkers and spectators (e.g., see Anderson, de Bruijn, Angus, Gordon, & Hastings, 2009, for review), but there has been a comparative lack of research attention directed toward understanding the impacts upon sportspeople, defined as people participating in sports. This is surprising, given the level of media exposure afforded to professional sportspeople, the rising phenomenon of off field ‘scandalous’ behavior, which is often alcohol related, and the acknowledged importance of sportspeople as community role models (Bush, Martin, & Bush, 2004). Moreover, it is important to investigate the impact of alcohol sponsorship upon sportspeople from a policy perspective concerned with promoting participation in sports (Payne, Reynolds, Brown, & Flemming, 2003).

Collegiate alcohol abuse and related incidents are increasing and have resulted in fatalities, serious health consequences, sexual assaults and adverse impacts upon enrolments and study (Glassman et al., 2013). In Australia, the Federal government has launched a national campaign targeting sports related binge drinking among young people, and has partnered with Australian University Sports, among other sporting organizations, to address binge drinking by college participants at the annual University Games (Australian National Preventative Health Taskforce, 2013). This research therefore examines Australian collegiate alcohol consumption and its relationship to alcohol sponsorship of collegiate sports, given the growing worldwide concern around this issue.

While there is evidence suggesting an association between alcohol advertising and consumption, (Anderson et al., 2009; Babor et al., 2003; Collins, Ellickson, McCaffrey, & Hambarsoomians, 2007; Gordon, MacKintosh, & Moodie, 2010; Grube, 1995) there has been relatively limited research attention directed toward the specific impact of alcohol sponsorship in sport. While sponsorship and advertising are often adopted as complementary marketing communications vehicles, they can be differentiated in terms of their objectives, the way that they are processed and the degree of regulation applied to them (Cornwell 2008). Sponsorship investment in sports is significant with global sponsorship investment in sports, excluding related advertising, estimated to be \$53.3 billion annually (International Events Group, 2013).

It is undisputed that excessive alcohol consumption is a major social and health problem (e.g., Rehm et al., 2009), which has motivated global policy concern over the role of alcohol marketing in consumption. Reduction of alcohol advertising, along with alcohol pricing and outlet density policies appears to be an effective way for reducing alcohol consumption and harms (Casswell & Thamarangsi, 2009; Anderson, Chisholm, & Fuhr, 2009). The vulnerability of young people to alcohol advertising has been emphasized by the World Health Organisation policy which advocates for both the content of alcohol marketing and the amount of exposure of young people to that marketing as crucial issues (World Health Organisation, 2011). Even since this strategy was formulated, evidence continues to accrue showing that young peoples’ total consumption of alcohol, and not just their brand preference, is influenced by sponsorship, the media and social media (Chick, 2012; Gordon et al., 2010). Recent moves to ban or limit alcohol sponsorship of sporting events by the Australian Preventative Health Taskforce (2009) and the United Kingdom’s House of Commons Health Committee Report on Alcohol (2009) have sparked extensive community debate, given entrenched alcohol industry investment in universally popular sporting events,

sports and clubs. The Australian government has recently implemented a community sponsorship fund replacement initiative aimed at reducing the community sports club dependency upon alcohol (Department of Health and Aging, 2011), and similar community initiatives including the Good Sports program have been very successful to this end.

The impact of sponsorship by the alcohol industry on the people participating and attending sponsored events has not been studied widely, which leaves a major knowledge gap in instituting policy recommendations. The issue has become more pressing recently, with the release of a damning report in Australia suggesting drug cheating, alcohol dependency and match fixing behaviour is prevalent across all sports (Australian Crime Commission, 2013).

College (i.e., university) sportspeople appear to be a particularly at risk population, suggesting a need for targeted policy. Research among college students in the U.S. indicates that college athletes are at greater risk of excessive alcohol use than non-athletes (Ford, 2007; Leichter, Meilman, Presley, & Cashin, 1998; Wilson, Sullivan, Myers, & Feltz, 2004).

This research therefore focuses upon university sportspeople, given their reported demographic vulnerability to binge drinking, and their likelihood of participation in sports. Australians aged 20-29 are the most likely of all age groups to drink at levels that are risky, or a high risk of harm in the short term (Australian Institute of Health and Welfare, 2005). This age group is also the population most likely to participate in sport or physical recreation (Australian Bureau of Statistics, 2007). Thus, targeting university sportspeople as a vulnerable population is an initial logical focus in examining the broader issue of the impact of alcohol sponsorship upon sportspeople.

## **Aims**

The aim of the current research was to investigate the extent of an association between alcohol sponsorship of sports and university sportspeople’s consumption and attitudes toward alcohol. An ancillary objective of this research is to build upon current

insight into the nature of alcohol sponsorship in university sports in response to regulators’ heightened concerns and calls for evidence around student binge drinking associated with sport. We focus this examination upon Australian students, given the lack of studies concerning this student population and the reported cultural entrenchment of alcohol sponsorship in Australian sport. Specifically our research questions are:-

1. What is the nature and extent of alcohol sponsorship of university sports?
2. Is alcohol sponsorship of sports associated with increased alcohol consumption among sponsored university sportspeople?
3. Does alcohol sponsorship of sport produce more favorable attitudes toward sponsoring brands among sponsored sportspeople?

The structure of this paper is as follows. First, a review of previous research relating to university sportspeople’s alcohol consumption is outlined, followed by a discussion of the sponsorship literature, highlighting the distinction between sponsorship and advertising. Next, our survey study is reported and finally results interpreted and discussed in the context of the existing literature and implications for policy and universities.

### **University Sportspeople and Alcohol Consumption Trends**

Research indicates that some drinking contexts, including sporting events, are particularly hazardous situations for college students in terms of their alcohol use and related consequences (White, Kraus, & Schwarzwelder, 2006). Indeed, students and alumni report drinking significantly more on college football game day than they do during typical social situations (Glassman et al., 2013). The National Institute on Alcohol Abuse and Alcoholism (NIAAA) estimates there are over 1,700 student deaths, 599,000 injuries, and 696,000 assaults annually are associated with heavy episodic drinking (Hingson et al., 2005). Heavy episodic drinkers also impact non-drinking peers, an outcome described by Wechsler and

colleagues (2002) as “secondhand” drinking effects, and include sleep interruption, insults and having to care for the drinking peer.

Alcohol continues to constitute a prominent public health challenge for universities and community leaders. Results from the American College Health Association National College Health Assessment (2007) reveal that approximately two fifths (39.2%) of college students consumed five or more drinks during the past two weeks, classifying them as heavy drinkers (O’Malley & Johnstone, 2002). One study found that 6% of college students were alcohol dependent (Knight et al., 2002), while another reported astonishing growth over a ten-year period in the proportion of students reporting that they “drink to get drunk” (Wechsler et al., 2002).

There is evidence suggesting that college athletes drink more than other students (Baer, 2002). National data indicate that certain groups of college students are at greater risk than others. Overall, men engage in heavy episodic drinking at higher rates than women, 49% versus 41%, respectively. One national study found that 47 % of male non athlete students engaged in heavy episodic drinking compared to 57% of intercollegiate athletes in the two weeks prior to the survey. A similar trend has been reported for female athletes (Nelsen & Wechsler, 2001). Leichliter et al. (1998) reported higher rates of binge drinking among the leaders of sports teams than among team members and team members were more likely to report binge drinking than non-sport team members.

Previous research has mostly assessed consumption in terms of hazardous drinking behavior using the Alcohol Use Disorders Identification Test (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; O’Brien & Kypri, 2008; O’Brien, Miller, Kolt, Martens, & Webber, 2011). However, we sought to measure multiple dimensions of alcohol consumption to ensure comprehensive coverage of different aspects including volume and frequency over short and longer periods, in addition to non-hazardous consumption that may still be

associated with sponsorship. The specific consumption dimensions and the questions asked of participants are outlined in subsequent sections and Table 1.

To date, only one study has been undertaken with respect to Australian sportspeople (O’Brien et al., 2011), and one examining a New Zealand sample (O’Brien & Kypri, 2008). These studies found an association between sponsorship and hazardous consumption as indicated by the Alcohol Use Disorders Test (AUDIT). The recent 2011 study by O’Brien and colleagues calibrated earlier international findings by establishing the existence of a more prevalent nature of sponsorship (i.e., direct to user) and a link to hazardous drinking behavior in a sample of university sportspeople from two universities sampled from one Australian state. Hence, results from this study require replication in a more diverse national sample that might be more representative of the national population of university sportspeople. Other empirical questions, which remain to be tested, extend to sponsorship-associated alcohol consumption that may not be classified as hazardous according to the AUDIT.

While excessive drinking patterns are important to assess, it is conceivable that any change in drinking cognitions or behavior that is attributable to alcohol sponsorship is of interest to policy makers, irrespective of whether such outcomes are classified as dangerous levels of consumption. For example, it is plausible that alcohol sponsorship might entail provision of free or discounted product, in which case it is likely that sponsored sportspeople might prefer that brand, and consume more of it, albeit to non-hazardous levels. Such outcomes potentially have evidential weight in the policy debate on whether alcohol sponsorship in sport should be banned or limited, and are relevant to sporting entities which might develop suitable interventions prior to consumption progressing to dangerous levels.

The current study therefore builds on extant research by sampling university sportspeople nationally, and examining impact upon multiple aspects of consumption, including, but not limited to, hazardous measures. Attitudes toward sponsoring brands are

also assessed, given the paucity of research examining the role of affective associations in motivating alcohol consumption (Karlsson, 2012). While many sportspeople may restrict alcohol consumption for training or health reasons, evidence suggesting preference for sponsoring companies’ brands would demonstrate effects of sponsorship that might inform the sponsorship partnership governance for parties on both sides of the alcohol sponsorship debate.

### **Sponsorship and Advertising**

Sponsorship, defined as an exchange between sponsor and event property whereby the event property receives compensation and the sponsor obtains the right to associate itself with the event (Becker-Olsen & Hill, 2006; Weeks, Cornwell, & Humphreys, 2006), represents a significant annual investment in Australian sports. Sponsorship portfolios may include a variety of properties, including naming rights, uniforms, venue signage, endorsement of individual players, teams or sports, and more common ‘direct to user’ sponsorship which may encompass free or discounted product, transport and entry to local clubs or hotels and volume rebates to clubs (O'Brien & Kypri, 2008; O'Brien et al., 2011; Reilly, 2010). Moreover, sponsorship and associated activation typically represent approximately 65% of the alcohol industry’s promotion budget (Center on Alcohol Marketing and Youth, 2004). This research therefore focuses on sponsorship impact, given the growing use of sponsorship in the marketing communications portfolio, and its differentiation from advertising as a promotional tool.

While sponsorship and advertising are related marketing communications tools, sponsorship differs from advertising in several ways. First, in contrast to the extended messaging opportunities incumbent with advertising, sponsorship operates in impoverished media which communicates limited message ‘chunks’ confined to brand names and logos. Secondly, there is evidence suggesting that consumers process sponsorship differently to

advertising, as sponsorship typically targets consumers during sporting events with which they are passionately engaged (Cornwell, 2008; Trail, Anderson, & Fink, 2005). In addition, sponsorship, which usually accompanies event pourage rights, offers the unique advantage of enabling product consumption simultaneously with message exposure. The objectives of sponsorship include increasing brand awareness, enhancing and changing brand image, corporate hospitality, increasing sales and ultimately increasing stock price (Cornwell, 2008; Walliser, 2003). Sponsorship effects are not only at the event itself, but sponsorship allows leveraging through sponsorship linked advertising, which enhances the overall impact (Kelly, Cornwell, McAlister, & Coote, 2012). Hence, this research is partially motivated by a need to examine sponsorship independently from advertising, given its importance in terms of investment and its potential to operate as either an independent communications mechanism or a complementary tool with advertising.

## **Method**

### **Participants**

A sample of 501 university sportspeople (i.e., students participating in a university sport) from across Australia (all Australian states and territories except the Northern Territory were represented) was voluntarily recruited to complete an online survey. Sampling bias was controlled through several strategies. Firstly, in addition to appealing to participants to express their opinion on alcohol sponsorship in sport, participants were informed that we were seeking their views on a range of matters including the expectations placed on sportspeople, sponsorship, and alcohol use, and therefore the issue of alcohol policy was not uniquely at the forefront. The second related strategy was to keep participants blind to the actual purpose of the study. Finally, an incentive of an Apple iPad was offered in an attempt to encourage those who may not have an interest in the topic to provide responses.

The majority of sportspeople were competing at club level (72%) while a significant proportion were competing at an elite or professional level (26%). Participants reported between one and 43 years' experience in their current sport ( $M = 9.0$ ,  $SD = 5.4$  years) and identified over 30 different sports in which they were involved (the most popular were netball, volleyball, basketball, touch football, soccer, and swimming with approximately 5-10% each). Approximately 33% ( $n = 167$ ) of sportspeople reported receiving some form of sponsorship from an alcohol brand or company (“sponsored sportspeople”). Most of the sponsored participants reported receiving sponsorship at a team (51%), club (83%), or sporting association (59%) level, whereas 17% received personal sponsorship. Most (77%) sponsored participants reported receiving multiple forms of sponsorship, with free/discount alcohol and vouchers (66%), funding for club fees and uniforms (55%), and prizes (31%) being the most common. Sponsored sportspeople were between 17 and 45 years of age ( $M = 21.8$ ,  $SD = 3.6$  years), approximately evenly distributed across genders (51.5% female), and most (89.8%) reported an income of less than \$50,000 per annum. Competitors not receiving alcohol sponsorship (“unsponsored sportspeople”), had a greater age range (between 17 and 59 years), were slightly older ( $M = 22.3$ ,  $SD = 5.2$  years) and had a higher proportion of female athletes (55%).

Recruitment was undertaken during the month preceding the Australian University Games in September 2011, an annual multi-sport inter-university competition that attracted 6,257 registered attendees representing over 40 Universities and tertiary education providers across Australia. Participants were recruited through advertisements on the University Games website, in the monthly online newsletter and through personal invitations from team managers. These advertisements enticed participants to express their opinion on alcohol sponsorship in sport, but did not otherwise disclose the purpose of the study. This recruitment approach elicited a sufficiently heterogeneous sample of sponsored versus non-sponsored

sportspeople, similar to the proportions found by O’Brien and colleagues (2011). However, in contrast to their earlier study, which was confined to university sportspeople from a single state, our sample was more representative of the national university sportsperson population. Given the nature of the recruitment process, a response rate could not be determined; however, the participants represent approximately 8% of the 6,257 athletes attending the university games event though not all of these attendees received an invitation.

### **Procedure and Measures**

Web-administered survey methodology was favored as it has been shown to reduce non-response bias (e.g., McCabe, Diez, Boyd, Nelson, & Weitzman, 2006) and in some cases, social desirability bias (Richman, Kiesler, Weisband, & Drasgow, 1999). This format has been shown to be particularly useful in alcohol research where respondents perceive it as more convenient and preferable to paper-and-pen formats (Miller et. al., 2002). Participation was anonymous and voluntary. Participants provided data on known predictors of consumption, including demographics such as postcode and university of origin, age of first alcoholic drink, level of sporting participation, duration of sports participation and type of sport. In addition, participants responded to items, consisting of five to seven point Likert scales adopted from previous research and assessing the focal variables of sponsorship, consumption, and attitudes towards and perceptions of alcohol and sponsorship.

**Sponsorship.** Sponsorship was assessed using modified items from previous alcohol industry sponsorship research (O’Brien & Kypri, 2008; O’Brien et al., 2011). In line with O’Brien and colleagues, participants were asked whether they personally, their team or club currently received sponsorship of any kind. However, additions were made to O’Brien and colleagues’ list of sponsorship types. In addition to “free product samples”, “free or discounted drinks”, “cash” and “funding for uniforms and club fees”, sponsored athletes were also asked to indicate what whether they received “free vouchers”, “free admissions to

licensed venues”, “competition prizes”, or any “other forms of sponsorship”). These more common forms of sponsorship were ascertained through exploratory personal interviews with sports club managers conducted prior to the survey development and are consistent with recent calls to recognize these more latent “direct to user” forms of alcohol industry sponsorship (e.g., O’Brien et al., 2011).

***Alcohol Consumption Indicators.*** In contrast to the previous work by O’Brien and Kypri (2008) and O’Brien et al. (2011) in which consumption was assessed solely in terms of hazardous drinking behavior (Using the Alcohol Use Disorders Identification Test; Saunders et al., 1993), the current study assessed multiple dimensions of alcohol consumption to ensure comprehensive coverage of different aspects including volume and frequency over short and longer periods. The specific consumption dimensions and the questions asked of participants are displayed in Table 1. We sought to detect any increase in consumption, including non-hazardous consumption that may be associated with sponsorship among sportspeople. Our broader focus of consumption patterns was motivated by the lack of empirical evidence regarding the impact of alcohol industry sponsorship upon sportspeople’s behavior, and the importance of sportspeople as community role models.

***Acute Consumption.*** To assess consumption with low recall bias as bias increases with the length of recall period (Gmel & Daeppen, 2007) and to gather data on acute (current) consumption levels, a standard weekly drinking (WD) measure was used (Bloomfield, Hope, & Kraus, 2012). Participants were asked, “Thinking back over this last week, how many drinks did you have on each day?” with an open response format for participants to enter any integer for each day of the week. Participants’ scores were calculated as the sum of their total drinks across the seven days.

***Chronic Pattern of Consumption.*** The most widely used approach to measuring long-term patterns of consumption is the Quantity-Frequency (QF) method (Gmel & Rehm, 2004).

The overall frequency of drinking over a reference period is captured as well as the typical number of drinks consumed on days when drinking occurred. The Task Force on Recommended Alcohol Questions recommends a reference period of 12 months, arguing that it offers the best balance between problems of recall and infrequent drinking patterns (National Institute of Alcohol Abuse and Alcoholism, 2011). Consistent with these recommendations, participants were asked how often they consumed alcohol over the past 12 months, and on a typical drinking day, how many drinks they usually consumed.

*Binge Consumption.* Heavy drinking was considered particularly important to capture since this tends to have the most harmful health impacts (Rehm et al., 2003). The most widely used indicator of heavy consumption is incidences of "binge" drinking defined by the National Institute on Alcohol Abuse and Alcoholism's Council as 5 or more drinks (male) or 4 or more drinks (female) in two hours. Participants were asked to indicate how often during the past 12 months they had engaged in binge drinking.

*Disordered Consumption.* Alcohol misuse (i.e., dependence and abuse) were assessed using the 4-item CAGE screening questionnaire (Ewing, 1984). Respondents indicated the extent to which each statement applied to them. The original "yes" or "no" response format was replaced with 5-point response scale to facilitate the assessment of small gradations in the extent that each statement applied to participants.

*Alcohol Consumption Attitudes and Perception.* Sponsored participants also provided data on their attitudes towards the sponsor's products (e.g., "Overall how much do you like the sponsor's product(s)?") and sponsorship arrangement (e.g., "In terms of the actual contract...are you required to consume the sponsor's product?"), the extent that sponsorship impacts consumption (e.g., "How has the accessibility of alcohol been affected by sponsorship?"), other factors that may contribute to consumption (e.g., "I feel pressure from my teammates to drink alcohol"), and attitudes towards sponsorship in sport (e.g.,

“Alcohol sponsorship of sport should be banned”). Overall, this part of the survey included 15 questions with Likert-type response scales for each question. Table 1 lists the items and response scale for these questions. Given the sensitive nature of the items, several questions were framed using a projective technique, whereby the respondent was asked to describe behavior or perceptions of other sportspeople or teammates rather than their own behavior. Some open-ended items were also included, as a means of limiting social desirability bias and encouraging rich and candid insight into the issue; data from these questions are not reported here.

Sponsored and non-sponsored athletes reported on the effects of teammates on their own consumption (e.g., “Suppose you were with a group of athletes who were drinking, how willing would you be to ...drink one drink?”), their perceptions of other sportspeople’s consumption (e.g., “Thinking back to the past year, can you think of any instances where another player or players... become aggressive after drinking too much?”), and aspects of team culture and attitude (e.g., “What does the club community (e.g., players, members, administration, etc.) think about non-drinkers?”). The latter items were adapted from prior studies concerned with measuring social and cultural norms associated with alcohol consumption among college athletes (Perkins, 2002; Ford, 2007). This part of the survey contained 13 questions to which participants responded using 5 to 7-point Likert-type scales (Table 1 lists the items and response scales for these questions).

### **Statistical Analyses**

Firstly differences in consumption across the specific sport being played, the level of competition (amateur, elite, professional, etc.), and the number of years involved in the sport were tested using ANOVA and correlation analyses. Regression analyses were then employed to determine the predictive power of sponsorship on consumption behavior at both a bivariate and multivariate level. Since known predictors of consumption such as age,

gender, income, and age of first drink may confound the relationship between sponsorship and consumption, it is conventional in this area of research to enter these as predictors into the regression model with the focal IV (sponsorship) to control for any influence they may exert (cf. O’Brien et al., 2011). More detailed analyses of the effects of sponsorship were conducted using analyses of covariance (controlling for the aforementioned confounds) in which consumption levels were compared between respondents who received direct-to-user forms of sponsorship and unsponsored sportspeople. Further ANCOVAs (controlling for the same confounds) were also conducted to uncover any differences in alcohol consumption attitudes and culture between sponsored and unsponsored athletes. Finally, descriptive information on athletes’ perception of aspects of the sponsorship arrangement and its effects were calculated including 95% confidence intervals for the population mean values and bivariate correlation analyses on dimensions of consumption found to overlap with many of these.

## **Results**

Preliminary analyses were first conducted to determine whether there were differences in consumption across the different sports participants were competing in, the level at which the participant competed, and the length of time they have been competing. Pairwise comparisons across the different sports using *t* tests with a Scheffe correction for multiple comparisons revealed consumption levels did not differ between sports ( $p \geq .096$ ). Similar comparisons in consumption were conducted across the different levels of competition (recreational/social  $n = 120$ , serious competitive  $n = 100$ , elite/professional  $n = 84$ ; with the other respondents participating at multiple levels) and once again no significant differences were observed ( $p \geq .396$ ). Finally the relationship between indicators of alcohol consumption and the number of years involved in the sport (controlling for participant age) were not significant ( $r < .10, p > .050$ ). Therefore, there appear to be no differences in

consumption across different sports, across different levels of competition, or the amount of participation time.

### **Sponsorship and Alcohol Consumption**

Multiple regression analyses were conducted between the five indicators of alcohol consumption (the dependent variables) and sponsorship status (focal predictor) while controlling for the influence of known predictors of consumption, which were simultaneously entered into the equation. To provide a point of comparison, bivariate regression analyses were also conducted with the consumption indicators as the dependent variables and each predictor on its own. The statistical output from these regression analyses are summarized in Table 2. Overall, the family of predictors accounted for small but significant proportions of variance (3% to 6%) in all five indicators of consumption. However, across both bivariate and multivariate models, the regression coefficient for sponsorship status did not differ significantly from zero and therefore, sponsorship was not able to predict consumption of any type. Each of the four control variables served to predict at least one aspect of consumption with a younger age of first drink predicting greater consumption on all indicators except the number of drinks on a typical drinking day. Younger age predicted a greater number of drinks on a typical drinking day and greater frequency of binge drinking episodes. Being male predicted reporting a greater number of drinks in the week prior to participation, while having a larger income predicted reporting more disordered drinking.

To further explore the potential effects of sponsorship on consumption, we investigated the effect of direct-to-user forms of sponsorship on consumption using a one-way between-subjects MANCOVA with participant age, gender, income, and age of first alcohol use entered as covariates, and the five alcohol consumption indicators as dependent variables. Sponsored participants who were in receipt of direct-to-user sponsorship (i.e., directly receiving alcohol products, vouchers, prizes, and discounted or free drinks from the

sponsoring company,  $n = 101$ ) were compared with non-sponsored sportspeople ( $n = 334$ ).

With the use of Wilk's criterion, the combined DVs were significantly affected by direct-to-user sponsorship status  $\Lambda = .97$ ,  $F(5, 425) = 2.72$ ,  $p = .020$ ,  $\eta_p^2 = .03$ . The between-subjects effects for each DV (displayed in the first group of rows in Table 3) and demonstrate that participants receiving direct-to-user sponsorship reported more frequent consumption over the previous 12 months (explaining 2% of residual variance in this indicator) and greater alcohol misuse (explaining 1% of residual variance in this indicator). Those in receipt of direct-to-user sponsorship also reported greater consumption over the week prior to data collection though this difference was only marginally significant.

Similar analysis was conducted to assess consumption differences between sponsored athletes in receipt of direct-to-user sponsorship ( $n = 101$ ) or indirect sponsorship ( $n = 66$ ). With the use of Wilk's criterion, the combined DVs were significantly affected by direct-to-user sponsorship status  $\Lambda = .96$ ,  $F(10, 980) = 2.06$ ,  $p = .025$ ,  $\eta_p^2 = .02$ . The between-subjects effects for each DV is displayed in the second group of rows in Table 3. Compared to the above differences between direct-to-user group and non-sponsored athlete, the indirect-to-user group was closer to the direct-to-user group for three of the five outcomes (12 months drinking, drinks on a typical drinking day, and binge drinking). There was actually a greater difference for drinks over the past week between the direct-to-user group and the indirect-to-user group, however with only 66 athletes receiving indirect-to-user sponsorship, the small effect was not a statistically reliable one. The results for the CAGE mirrored those from the comparison between non-sponsored and direct-to-user athletes (explaining 2% of residual variance).

### **Alcohol Consumption Attitudes and Culture**

In addition to actual consumption levels, we investigated the effects of sponsorship on participants' consumption in the company of their peers, team/club drinking attitudes, and

their peers' consumption and behavior. These differences were assessed using a one-way between-subjects MANCOVA with participant age, gender, income, and age of first alcohol entered as covariates, and the sponsorship status (sponsored versus not-sponsored) as the IV. The specific dependent variables are listed in Table 4 along with the statistical output. With the use of Wilk's criterion, the combined DVs were significantly affected by sponsorship status  $\Lambda = .96$ ,  $F(8, 492) = 2.85$ ,  $p = .020$ ,  $\eta_p^2 = .04$ . The between-subjects effects for each DV show that participants receiving alcohol industry sponsorship were more likely to consume alcohol in the company of team/club mates (1% of residual variance explained) and that their own consumption had increased since they had joined their sport team or club (1% of residual variance explained). Sponsored athletes were also more concerned over their peer's poor behavior following consumption (1% of residual variance explained) and believed their peers were more likely to conceal their consumption (2% of residual variance explained). No significant differences emerged in the likelihood that peers' would conceal sponsorship effects on consumption, the degree of team/club admiration for non-drinkers, or the frequency with which team/club consumption rules were enforced.

### **Perceptions of Sponsorship**

To better understand sponsored athletes' perceptions and attitudes towards the sponsorship arrangement and its effects, we analysed their responses to a series of questions relating to their perceptions of sponsorship in sport. The population mean values for these questions were estimated using the observed sample means and 95% confidence intervals (these values are reported in Table 1). These confidence intervals were also used to compare responses to questions with equivalent response scales. Additionally, correlation analyses were conducted to investigate whether variance in these perceptions and attitudes correlated with variance in consumption (significant correlations were only observed with prior week consumption and disordered consumption and these are reported in Table 5). Based on the

mean values, sponsored sportspeople reported a stronger liking for the sponsor’s product after receiving sponsorship than prior to receiving sponsorship. While respondents reported feeling that they owed the sponsors support, this did not translate into an expectation that they actually drink the sponsor’s product. However, they reported a significantly stronger sense of expectation that they drink at a sponsor’s venue. Players were also largely undecided as to whether they would choose the sponsor’s product over other products.

Respondents felt that their own consumption had been largely unchanged as a result of receiving sponsorship but they were more likely to report that other players drank more since receiving alcohol sponsorship. If there was response bias in reporting the sponsorship did not affect their own drinking behavior, their report of others being affected by sponsorship would likely be more accurate and represents insider evidence on what is happening. There was a perception that the accessibility of alcohol was higher as a result of sponsorship, and there was positive endorsement for the beliefs that hard work entitled them to drink. Conversely, players disagreed that drinking was a way to deal with poor performances and they generally disagreed that there was pressure from teammates to drink. Finally, respondents were positive regarding alcohol sponsorship overall and generally did not believe it should be banned. Variation in responses to these questions also correlated with some aspects of consumption, specifically acute (prior week) and disordered consumption. Sportspeople reporting a greater sense of obligation towards the sponsoring company were more likely to report disordered consumption levels. Disordered consumption was also higher for athletes reporting pressure from teammates to drink and for those admitting to alcohol use as a way to deal with poor performances. Finally, positive attitudes toward alcohol sponsorship in sport correlated with greater drinking the week previously.

## **Discussion**

The present research examined the association between alcohol sponsorship of sports and behaviors and perceptions in relation to alcohol among university sportspeople. It contributes to extant research by: 1) investigating a more diverse national sample of sportspeople than previous studies on this under-researched issue; 2) capturing the complexity of sponsorship of university sports, including direct and indirect forms of sponsorship; and 3) examining affective outcomes of alcohol sponsorship among sportspeople for the first time.

### **Key Findings**

One third (33%) of sportspeople surveyed reported that they were sponsored by the alcohol industry. This finding is critical, given college students known vulnerability to hazardous drinking compared to the general population, and heightened vulnerability of college sportspeople within the student population. Our research supports mounting evidence to suggest that alcohol industry sponsorship of sport extends to ‘direct to user’ strategies, which are not idiosyncratic to particular population samples. Indeed, such sponsorships, including product, vouchers, discounts and volume rebates for clubs, are more prevalent in amateur sport and therefore potentially affect more sportspeople and sporting communities. Although there was no overall effect of sponsorship upon the five measures of consumption, ‘direct to user’ alcohol industry sponsorship in the form of vouchers, prizes and product was associated with alcohol use (i.e., 12-month consumption and disordered consumption) though these effects were small. Moreover, university sportspeople’s attitudes toward sponsoring alcohol brands were positive, and both acute and disordered consumption correlated with liking for sponsoring brands. Sportspeople also reported that other sponsored sportspeople were more likely to consume sponsors’ products, consume more alcohol than non-sponsored sportspeople and consume alcohol after games with their team. This is an important finding

because the projective nature of the question minimizes social desirability bias associated with self-reported consumption. Some social norms associated with sport, such as pressure to drink with teammates, were also associated with disordered consumption, however this finding only applies to those receiving sponsorship since non-sponsored sportspeople did not complete this part of the survey. Research on the collectivity of drinking cultures indicates that people's drinking habits tend to mirror those of their peers (Bosari & Carey, 2001). This implies an individual exposed to a heavy drinking environment (where drinking is socially sanctioned and encouraged e.g. the sport setting) will tend to become a heavier drinker. Our research emphasizes this concern in a university sports setting and finds empirical evidence of these sanctioning norms being prevalent in college sport.

What does this mean for institutional (i.e., university and club) management of sponsorships? These findings imply that careful negotiation of sponsorship terms is needed to limit provision of free or discounted product to student sportspeople and attendees at university sporting events. While it may not be feasible or realistic to avoid alcohol sponsorship of events altogether, sponsorship deals fostering provision of cash, uniforms or travel might reduce the risk of hazardous consumption and liking that appears to attach to direct to user sponsorship forms. Organizers should enter sponsorship arrangements aware of the subtle nature of these direct to user alcohol sponsorships in the college sports environment and the impacts it can potentially have upon participants and even bystanders. With this in mind, communications around the event can be an important means by which to limit what has become an insidious sponsorship presence by the alcohol industry. For example, policies limiting sponsorship leveraging by the alcohol industry and increasing health warnings around alcohol binge and hazardous drinking among participants at sporting events are warranted by this research.

These findings are somewhat consistent with results from New Zealand and Australia (O'Brien & Kypri, 2008; O'Brien et al., 2011), which also found a link between ‘direct to user’ sponsorship and disordered consumption. However, in contrast to those studies, we found no overall effect of sponsorship upon consumption, indicating that the association between sponsorship and consumption suggested by prior studies does not extend to all sponsorship and consumption measures. This difference in findings may be attributable to a more heterogeneous sample receiving a greater variety of sponsorship types than in previous studies. We therefore advance research methodologically by reporting differences emerging across sponsorship types in a diverse sample of university sportspeople, revealing a more detailed and complex picture of sponsorship effects.

Given the prevalence of ‘direct to user’ sponsorships, and their association with dangerous consumption among university sportspeople, it is critical that policy target these common forms of sponsorship. Policy initiatives aimed at buying out these forms of sponsorship, such as the Good Sports program and Preventative Health Taskforce Agency’s sponsorship fund (2012) in Australia, are promising steps in this direction. Secondly, although our results suggest that excessive alcohol consumption among university sportspeople may depend upon the type of sponsorship offered, alcohol sponsorship in general may still have critical impact by influencing brand choice.

### **Limitations and Future Research**

A limitation of the study is the cross-sectional design, which precludes causal attributions, and response bias inherent in self-reporting of behaviors and attitudes relating to alcohol. However, our survey instrument limited social desirability bias by incorporating several open-ended items, in addition to projective questions. While prior research has demonstrated a relationship between sponsorship and attitudes among young people in general, there has been relatively little research attention upon attitudes among young

sportspeople, despite existing research suggesting that they constitute a vulnerable population. Our findings suggest the importance of team culture in predicting consumption, and the possibility that it may operate distinctly from sponsorship. However, the precise relationships among sponsorship, attitudes and consumption require further empirical testing. The statistical control for various predictors does not preclude alternative explanations for the association between sponsorship and disordered consumption. However, we can rule out the possibility of reverse causality, in terms of heavy drinkers seeking out alcohol sponsorship, as the majority of alcohol industry-sponsored participants were sponsored at club level, rather than individually. A logical progression for this line of research would be to directly test causal impacts of alcohol industry sponsorship through experiments in a laboratory setting. Replication of this research in sportspeople other than university sportspeople would also be worthwhile to assess whether university sportspeople may be more vulnerable to sponsorship-stimulating consumption. Our more heterogeneous sample has some interesting insights against past work, with logical extensions of our research to other contexts including grass roots and local sport clubs or social participation, where much of the debate on alcohol sponsorship and policy has been founded.

Another research direction would be to examine the matching of intentions and attitudes toward sponsors and behavior. While our research found correlation between attitudes and acute and disordered drinking, future research might consider the causality between these variables and possible mediating variables such as social norms.

### **Policy and Regulation Advice**

This research addresses the lack of evidence currently available to regulators and the community to ensure informed decision making on this important issue. Findings are consistent with previous studies that suggest a link between sponsorship and increased consumption among university sportspeople, but qualify these findings to ‘direct to user’

sponsorships, rather than an overall sponsorship-related effect. Thus, the debate over regulation of alcohol sport sponsorship could be split into two parts. One is alcohol cash payment to the team or athlete, which is what people usually think of as sponsorship, but which is hard to prove direct causal links to alcohol abuse by sportspeople and the public. The other is direct to user forms of alcohol sponsorship, for which a few studies have now found evidence of effects, and for which the direction of causal influence is clearer. More research on direct to user effects is therefore warranted.

Our finding that sportspeople as consumers have defined views and attitudes toward sponsors and projected views to teammates may facilitate greater discussion for organizations on both sides of the sponsorship arrangement. As such this work can contribute to the policy debate and management of the sponsorship relationship, such as developing marketing communications promoting sensible consumption or event-specific guidelines.

Our results provide much needed evidence of specific policy directions around alcohol sponsorship in sport, including: 1) regulation of product sponsorships, such as product discounts, prizes and establishment entry, particularly associated with sporting clubs, rather than broad regulation of all sponsorship; 2) targeting of social and cultural norms associated with drinking in university team sports, and further examination of their impact; 3) education of university sportspeople, as they may not be aware that alcohol sponsorship can impact them; and 4) improving governance of the sponsorship relationships between university sports and potential alcohol sponsors, to ensure consistency of negotiations, and limiting of sponsorship leveraging around events and sports. Coordinated governance from sporting organizations and government would assist universities to implement and enforce these policies and disseminate initiatives efficiently. Anti-tobacco policy implemented two decades ago is one possible avenue for policy formulation guidance on controversial product sponsorships in sports generally, including alcohol, junk food and gambling. The banning of

tobacco sponsorship and advertising did not result in long term detriment to the commercialization of sports. However, it should be emphasized that tobacco and alcohol cases can be contrasted on the basis that sport is now far more reliant upon commercial sponsorships and secondly, alcohol in moderation is not harmful. Governance alternatives relating to alcohol could therefore feasibly encompass hybrid options, as distinct from banning. For example, a combination of alcohol sponsorship with health messages might be a viable option in conjunction with careful targeting of direct to user sponsorships and vulnerable populations, including university sportspeople. Another alternative that mirrors the tobacco model is partitioning a proportion of excise taxes for supporting community sports, a concept known as ring fencing. In sum, the findings point to the importance of measuring impacts in terms of a spectrum of sponsorship tactics, and recognizing the complexity of the mechanism between sponsorship and university sportspeople’s alcohol-related behavior. Thus antecedents to collegiate sportspeople’s consumption need to be the focus of policy debate and future research, rather than a banning of alcohol sponsorship of sports.

## References

- American College Health Association, The. (2008). American college health association—national college health assessment spring 2007 reference group data report (abridged). *Journal of American College Health, 56*(5), 469-79.
- Anderson, P., Chrisholm, D., & Fuhr, D. C. (2009). Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *Lancet, 373*, 2234-46. doi:10.1016/S0140-6736(09)60744-3
- Anderson, P., de Bruijn, A., Angus, K., Gordon, R., & Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: A systematic review of longitudinal studies. *Alcohol and Alcoholism, 44*, 229-43. doi:10.1093/alcalc/agn115
- Australian Bureau of Statistics. (2007). *Australian social trends, 2007*. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4102.02007>
- Australian Crime Commission. (2013). *Organised crime and drugs in sport*. Retrieved from <http://www.crimecommission.gov.au/sites/default/files/files/organised-crime-and-drugs-in-sports-feb2013.pdf>
- Australian Institute of Health and Welfare. (2005). *Australia's welfare 2005*. Retrieved from <http://www.aihw.gov.au/publication-detail/?id=6442467784>
- Australian National Preventative Health Taskforce, Australian Government. (2009). *Australia: The Healthiest Country by 2020—National Preventative Health Strategy—the roadmap for action*. Retrieved from <http://www.health.gov.au/internet/preventativehealth/publishing.nsf/Content/nphs-roadmap>.
- Australian National Preventative Health Agency, Australian Government. (2013). Retrieved from <http://www.tacklingbingedrinking.gov.au/internet/tackling/publishing.nsf> .

Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Graham, K., ... Rossow, I.

(2003). *Alcohol: No Ordinary Commodity - Research and Public Policy*. Oxford:

Oxford University Press.

Baer, J. S. (2002). Student factors: Understanding individual variation in college drinking.

*Journal of Studies on Alcohol Supplement, 14*, 40-53.

Becker-Olsen, K. L., & Hill, R. P. (2006). The impact of sponsor fit on brand equity. *Journal*

*of Service Research, 9*, 73-83. doi: 10.1177/1094670506289532

Bloomfield, K., Hope, A., & Kraus, L. (2012). Alcohol survey measures for Europe: A

literature review. *Drugs, Education, Prevention, and Policy, 1*, 1-13.

doi:10.3109/09687637.2011.642906

Bosari, B. & Carey, K. (2001). Peer influences on college drinking: a review of the research.

*Journal of Substance Abuse, 13*:4, 391-424.

Bush, V. D., Martin, C. A., & Bush, A. J. (2004). Sports celebrity influence on the behavioral

intentions of Generation Y. *Journal of Advertising Research, 44*, 108-17. doi:

<http://dx.doi.org/10.1017/S0021849904040206>

Casswell, S., & Thamarangsi, T. (2009). Reducing harm from alcohol: Call to action. *Lancet,*

*373*, 2247-57. doi:10.1016/S0140-6736(09)60745-5

Center on Alcohol Marketing and Youth (2004). *Alcohol Advertising on Sports Television*

*2001 to 2003*. Retrieved from

<http://camy.org/factsheets/pdf/AlcoholAdvertisingSportsTelevision2001-2003.pdf>.

Chick, J. (2012). 16 for the price of 10: Effects of a ban on multi-buy alcohol. *Alcohol and*

*Alcoholism, 47*(2), 83. doi:10.1093/alcalc/ags005

Collins, R., Ellickson, P. L., McCaffrey, D., & Hambarsoomians, K. (2007). Early adolescent

exposure to alcohol advertising and its relationship to underage drinking. *Journal of*

*Adolescent Health, 40*, 527-34.

Cornwell, B. T. (2008). State of the art and science in sponsorship-linked marketing. *Journal of Advertising*, 37, 41-55.

Department of Health and Ageing, Australian Government. (2011). *2011-12 Department of health and ageing annual report*. Retrieved from  
<http://www.health.gov.au/internet/main/publishing.nsf/Content/annual-report2011-12>

Ewing, J. A. (1984). Detecting Alcoholism. The CAGE questionnaire. *Journal of American Medical Association*, 252, 1905-07.

Ford, J. A. (2007). Alcohol use among college students: a comparison of athletes and nonathletes. *Substance Use and Misuse*, 42, 1367-77.

Glassman T, Dodd V, Sheu J, Rienzo B, Wagenaar A. (2013) Extreme Ritualistic Alcohol Consumption Among College Students on Game Day. *Journ. American College Health* 58:5, 413-423.

Gmel, G., & Daepfen, J. B. (2007). Recall bias for seven-day recall measurement of alcohol consumption among emergency department patients: Implications for case-crossover designs. *Journal of Studies on Alcohol and Drugs*, 68, 303-10.

Gmel, G., & Rehm, J. (2004). Measuring alcohol consumption. *Contemporary Drug Problems*, 31, 467-540.

Gordon, R., MacKintosh, A. M., & Moodie, C. (2010). The impact of alcohol marketing on youth drinking behaviour: A two-stage cohort study. *Alcohol and Alcoholism*, 45, 470-80. doi: 10.1093/alcalc/agq047

Grube, J. W. (1995). Television alcohol portrayals, alcohol advertising, and alcohol expectancies among children and adolescents. In S. E. Martin (Ed.), *The Effects of the Mass Media on the Use and Abuse of Alcohol* (pp. 105-121). Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Hingson, R., Heeren, T., Winter, M., Wechsler, H. (2005). Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24: Changes from 1998 to 2001. *Annual Review of Public Health, 26*, 259-79.

International Events Group (2013). IEG Sponsorship Briefing.

<http://www.sponsorship.com/IEG>, accessed 16 July.

Karlsson, P. (2012). The relationship between affective associations with alcohol and binge drinking. *Journal of Substance Use, 17*, 41-50. doi:10.3109/14659891.2010.519419

Kelly, S. J., Cornwell, T. B., McAlister, M. L., & Coote, L. V. (2012). Event-related advertising and the special case of sponsorship-linked advertising. *International Journal of Advertising, 31*, 15-37.

Knight, J. R., Wechsler, H., Kuo, M., Seibring, M., Weitzman, E. R., & Schuckit, M. A. (2002). Alcohol abuse and dependence among U.S. college students. *Journal of Studies on Alcohol, 63*(3), 263-70.

Leichliter, J. S., Meilman, P. W., Presley, C. A., & Cashin, J. R. (1998). Alcohol use and related consequences among students with varying levels of involvement in college athletics. *Journal of American College Health, 46*, 257-62.

McCabe, S. E., Diez, A., Boyd, C. J., Nelson, T. F., & Weitzman, E. R. (2006). Comparing web and mail responses in a mixed mode survey in college alcohol use research. *Addictive Behaviors, 31*, 1619-27.

Miller, E. T., Neal, D. J., Roberts, L. J., Baer, J. S., Cressler, S. O., Metrik, J., & Marlatt, G. A. (2002). Test-retest reliability of alcohol measures: Is there a difference between Internet-based assessment and traditional methods? *Psychology of Addictive Behaviors, 16*(1), 56-63. doi: 10.1037/0893-164x.16.1.56

- National Institute of Alcohol Abuse and Alcoholism. (2011). *Task Force on Recommended Alcohol Questions -National Council on Alcohol Abuse and Alcoholism Recommended Sets of Alcohol Consumption Questions*. Retrieved from <http://www.niaaa.nih.gov/>
- Nelson, T. F., & Wechsler, H. (2001). Alcohol and college athletes. *Medicine and Science in Sports and Exercise*, 33(1), 43-7. doi:10.1097/00005768-200101000-00008
- O'Brien, K. S., & Kypri, K. (2008). Alcohol industry sponsorship of sport and drinking levels in New Zealand sportspeople. *Addiction*, 103, 1961-66.
- O'Brien, K. S., Miller, P. G., Kolt, G. S., Martens, M. P., & Webber, A. (2011). Alcohol industry and non-alcohol industry sponsorship of sportspeople and drinking. *Alcohol and Alcoholism*, 46, 210-13. doi: 10.1093/alcalc/agq095
- O'Malley, P. M., & Johnston, L. D. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol*, 14, 23-39.
- Payne, W. R., Reynolds, M., Brown, S., & Flemming, A. (2003). *Sports role models and their impact on participation in physical activity*. Victorian Health Promotion Foundation. Retrieved from <http://www.vichealth.vic.gov.au/rhadmin/articles/files/Sports%20Role%20Model%20Publication.pdf>
- Perkins, H. W. (2002). Social norms and the prevention of alcohol misuse in collegiate contexts. *Journal of Studies on Alcohol, Supplement*, 14, 164-72.
- Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y., & Patra, J. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet*, 373, 2223-33. doi:10.1016/S0140-6736(09)60746-7
- Rehm, J., Room, R., Graham, K., Monteiro, M., Gmel, G., & Sempos, C. T. (2003). The relationship of average volume of alcohol consumption and patterns of drinking to

burden of disease: An overview. *Addiction*, 98, 1209-28. doi:10.1111/j.1360-0443.2010.02899.x

Reilly, J. (2010, Sept 05). Last orders on the cards for alcohol ads in sports: but most people oppose outright ban on drink firms' sponsorship. *Sunday Independent*. Retrieved from <http://www.independent.ie/nationalnews/last-orders-on-the-cards-for-alcohol-ads-in-sports-2325328.html>.

Richman, W. L., Kiesler, S., Weisband, S., & Drasgow, F. (1999). A meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews. *Journal of Applied Psychology*, 84, 754-75.

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): World Health Organisation Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption—II. *Addiction*, 88, 791–804. doi:10.1111/j.1360-0443.1993.tb02093.x

The House of Commons Health Committee, United Kingdom. (2009). *Report on Alcohol*. Retrieved from <http://www.parliament.the-stationery-office.co.uk/pa/cm200809/cmselect/cmhealth/368/368ii.pdf>

Trail, G. T., Anderson, D. F., & Fink, J. S. (2005). Consumer satisfaction and identity theory: A model of sport spectator conative loyalty. *Sport Marketing Quarterly*, 14, 98-112.

Walliser, B. (2003). An international review of sponsorship research: an extension and update. *International Journal of Advertising*, 22, 64-72.

Weeks, C. S., Cornwell, T. B., & Humphreys, M. S. (2006). Conceptualizing sponsorship: An item and relational information account. In L. R. Kahle & C. H. Kim (Eds.), *Creating Images and the Psychology of Marketing Communication* (pp. 257-276). USA: Lawrence Erlbaum Associates.

Wechsler, H., Lee, J. E., Kuo, M., Seibring, M., Nelson, T. F., Lee, H. (2002). Trends in college binge drinking during a period of increased prevention efforts. Findings from 4 Harvard School of Public Health College alcohol study surveys: 1993-2001. *Journal of American College Health*, 50(5), 203-17.

White, A. M., Kraus, C. L., Swartzwelder, H. S. (2006). Many college freshmen drink at levels far beyond the binge threshold. *Alcohol Clin Exp Res*, 30, 1006-10.

Wilson, R. C., Sullivan, P. J., Myers, N. D., & Feltz, D. L. (2004). Sources of sport confidence of master athletes. *Journal of Sport and Exercise Psychology*, 26, 369-84.

World Health Organisation (2011). Global Status Report on Alcohol and Health.

**Table 1.** Scale and Item Information and Descriptive Statistics

Construct	Item(s)	Response Scale	Mean / %	SD	95% CI
<b>Consumption</b>					
Drinks Last Week	“Thinking back over this last week, how many drinks did you have on each day?”	Open	9.56	13.32	8.38 – 10.75
12-Months Drinking	“During the last 12 months, how often did you have any kind of drink containing alcohol?”	1 “I did not drink in the past year” to 10 “Every day”	5.47 (5 = “Once or twice each month”, 6 = “Once a week”)	1.81	5.31 – 5.63
Drinks on Drinking Day	“During the last 12 months, how many alcoholic drinks did you have on a typical day when you were drinking?”	1 “Just 1 drink” to 7 “18 or more drinks”	3.25 (3 = “3 to 4 drinks”, 4 = “5 to 8 drinks”)	1.33	3.13 – 3.37
Binge Drinking	“During the last 12 months, how often did you have 5 or more (Male) or 4 or more (Female) drinks containing alcohol within a two hour period?”	1 “Never” to 9 “Every day”	3.28 (3 = “Several times in the past year”, 4 = “”)	1.74	3.12 – 3.48
CAGE	Four-items ( $\alpha = .77$ ): e.g., “Have you ever felt you should cut down on your drinking?”	1 “Not at all” to 5 “Extremely”	6.90	3.11	6.62 – 7.17
<b>Sponsorship</b>					
Receipt of any sponsorship	“Do you personally, or does your team or club currently receive sponsorship from a company involved in producing or selling alcohol?”	“yes” or “no”	33%	-	-
Specific sponsorship types	“As part of the support or sponsorship provided by any alcohol companies, please indicate what types of assistance are included.”	“Product samples”	14%	-	-
	“Free/discounted drinks”	“yes” or “no”	41%	-	-
	“Vouchers”	“yes” or “no”	26%	-	-
	“Admissions to licensed venues”	“yes” or “no”	25%	-	-
	“Cash”	“yes” or “no”	23%	-	-
	“Competition prizes”	“yes” or “no”	31%	-	-
	“Funding for uniforms”	“yes” or “no”	29%	-	-
“Funding for club fees”	“yes” or “no”	26%	-	-	
“Other”	“yes” or “no”	6%	-	-	
<b>Aspects of Peer Behavior and Team/Club Culture</b>					
Likelihood of consuming alcohol with peers	Three-items ( $\alpha = .81$ ): e.g., “Suppose you were with a group of athletes who were drinking, how willing would you be to ...drink one drink?” The other two items ask about the likelihood of having “more than one drink” and of “getting drunk”.	1 “Very Unwilling” to 7 “Very Willing”	4.63	1.28	4.52 – 4.74

Construct	Item(s)	Response Scale	Mean / %	SD	95% CI
Consumption has increased since joining team/club	“Since joining your team or club, do you tend to drink...”	1 “Much less” to 5 “Much more”	3.07	0.81	3.00 – 3.15
Concern over their peers’ consumption	Two-items ( $\alpha = .85$ ): e.g., “During the past year, have you been distressed because of other players’ drinking?” The other item asks the frequency the respondent has “been worried about other players’ drinking.”	1 “Never” to 5 “Frequently, or all the time”	1.72	0.85	1.65 – 1.80
Concern over peers’ poor behavior following consumption	Three-items ( $\alpha = .87$ ): “Thinking back to the past year, can you think of any instances where another player or players have acted unwisely after drinking too much?” The other items refer to other players have acted “inappropriately” or “aggressively”.	1 “No” to 5 “Yes all the time”	2.47	1.02	2.38 – 2.56
Likelihood that peers’ would conceal consumption	“How likely is it that players might try to cover up their level of drinking?”	1 “Extremely unlikely” to 6 “Extremely likely”	2.27	1.19	2.17 – 2.38
Likelihood that peers’ would conceal sponsorship effects on consumption	“How likely is it that players might try to cover up alcohol sponsorship effects on their drinking?”	1 “Extremely unlikely” to 6 “Extremely likely”	2.11	1.23	2.00 – 2.22
Team/club admiration of non-drinkers	“What does the club community (e.g., players, members, administration, etc.) think about non-drinkers?”	1 “No admiration or respect” to 5 “Great admiration or respect”	3.15	0.73	3.09 – 3.22
Team/club rules about consumption enforced	“How often are team rules about drinking enforced?”	1 “No - never” to 5 “Frequently or all the time”	2.65	1.19	2.55 – 2.76
<b>Perceptions of Aspects of Sponsorship (sponsored sportspeople only)</b>					
Prior use of sponsor’s product	“Did you drink the sponsor’s product(s) before they became a sponsor?”	1 “Very Strongly Avoid” to 7 “Very Strongly Prefer”	4.33 (4 = Indifferent, 5 = Prefer)	1.06	4.16 - 4.49
Like sponsor’s product	“Overall how much do you like the sponsor’s product(s)?”	1 “Dislike Extremely” to 9 “Like Extremely”	6.37 (6 = Like Slightly, 7 = Like Moderately)	1.41	6.15 - 6.58
Choose sponsor product	“When you like having an alcoholic drink, do you choose the sponsor’s product(s)?”	1 “Very Unlikely” to 7 “Very Likely”	4.18 (4 = “Undecided”, 5 = “Somewhat Likely”)	1.41	3.96 - 4.39
Player’s owe sponsors support	“To what extent do players feel that they owe alcohol sponsors their support?”	1 “Not at all” to 5 “Extremely”	2.23 (2 = “Slightly”, 3 = “Moderately”)	0.98	2.08 - 2.38
Player’s perceive expectations to drink sponsor’s product	“Are you expected to drink the sponsor’s product after training, games, and/or events?”	1 “Not at all” to 5 “Extremely”	1.81 (1 = “Not at all”, 2 = “Slightly”)	1.07	1.64 - 1.97

Construct	Item(s)	Response Scale	Mean / %	SD	95% CI
Player’s perceive expectations to drink at sponsor’s establishment	“Are you expected to drink at the sponsor’s establishment (e.g., local hotel, club, temporary precinct such as marquee) after practices, games, or events?”	1 “Not at all” to 5 “Extremely”	2.53 (2 = “Slightly”, 3 = “Moderately”)	1.27	2.33 - 2.72
Sponsorship changes personal consumption	“If you compare your current drinking habits to those you had before this sponsorship, do you tend to drink?”	1 “A lot less than before” to 5 “A lot more than before”	3.14 (3 = “The same as before”, 4 = “Slightly more than before”)	0.48	3.07 - 3.21
Sponsorship changes other player’s consumption	“What about other players on your team or in the sport generally, do they tend to drink...”	1 “A lot less than before” to 5 “A lot more than before”	3.42 (3 = “The same as before”, 4 = “Slightly more than before”)	0.62	3.32 - 3.51
General impact on consumption	“In general, what kind of impact has alcohol sponsorship in your sport had on how much players drink?”	1 “No Impact” to 5 “Very High Impact”	2.28 (2 = “Slight Impact”, 3 = “Moderate Impact”)	0.97	2.13 - 2.43
Sponsorship changes accessibility	“How has the accessibility of alcohol been affected by sponsorship?”	1 “It is much less accessible” to 5 “It is much more accessible”	3.28 (3 = “Same as Before”, 4 = “Slightly More Accessible”)	0.62	3.18 - 3.37
[Player] Can drink because they work hard	“Because I work so hard at my sport, I should be able to drink to have a good time?”	1 “Strongly Disagree” to 7 “Strongly Agree”	4.66 (4 = “Neutral”, 5 = “Slightly Agree”)	1.35	4.45 - 4.87
[Player] Drinks to deal with poor performance	“I drink to help me deal with poor performances?”	1 “Strongly Disagree” to 7 “Strongly Agree”	2.09 (2 “Disagree”, 3 “Slightly Disagree”)	1.46	1.87 - 2.31
[Player] Perceives pressure from teammates to drink	“I feel pressure from my teammates to drink alcohol?”	1 “Strongly Disagree” to 7 “Strongly Agree”	3.45 (3 = Slightly Disagree, 4 = Neutral (1-7 scale)	1.76	3.18 - 3.72
No problems with alcohol sponsorship in sport	“There is no problem with alcohol sponsorship in sport?”	1 “Strongly Disagree” to 7 “Strongly Agree”	4.29 (4 = “Neutral”, 5 = “Slightly Agree”)	1.50	4.06 - 4.52
Alcohol sponsorship in sport should be banned	“Alcohol sponsorship of sport should be banned?”	1 “Strongly Disagree” to 7 “Strongly Agree”	2.85 (2 = “Disagree”, 3 = “Slightly Disagree”)	1.56	2.61 - 3.09

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Table 2.** Ordinary Least Squares Regression Estimates for Bivariate (*Bi*) and Multivariate (*Multi*) Regression Models

Predictor	Criterion														
	Drinks Last Week			12-Months Drinking			Drinks on Drinking Day			Binge Drinking			CAGE		
	<i>Bivariate</i>		<i>Multi</i>	<i>Bivariate</i>		<i>Multi</i>	<i>Bivariate</i>		<i>Multi</i>	<i>Bivariate</i>		<i>Multi</i>	<i>Bivariate</i>		<i>Multi</i>
	<i>b</i>	95% CI	$\beta$	<i>b</i>	95% CI	$\beta$	<i>b</i>	95% CI	$\beta$	<i>b</i>	95% CI	$\beta$	<i>b</i>	95% CI	$\beta$
Age	.001	-.017 to .019	-.013	.022*	.003 to .040	.077	-.025**	-.043 to -.066	-.150**	-.027**	-.046 to -.009	-.167***	-.000	-.019 to .018	-.044
Gender <sup>a</sup>	-.230**	-.399 to -.061	-.112*	-.082	-.258 to .094	-.019	-.135	-.312 to .041	-.076	-.112	-.289 to .065	-.059	-.143	-.319 to .033	-.061
Income <sup>b</sup>	.028	-.232 to .288	.009	.286*	.018 to .554	.063	.075	-.196 to .345	.072	.106	-.165 to .377	.086	.331*	.063 to .599	.114
First Drink <sup>c</sup>	-.062**	-.100 to -.024	-.135**	-.091***	-.130 to -.052	-.197***	-.038	-.077 to .002	-.079	-.081***	-.120 to -.041	-.174***	-.061**	-.100 to -.021	-.126**
Sponsorship <sup>d</sup>	-.009	-.188 to .170	.018	.007	-.178 to .192	-.006	-.002	-.188 to .184	-.022	.000	-.186 to .186	-.025	.140	-.045 to .324	.046
$R^2 =$		.03**			.05***			.03**			.06***			.04**	

Note. <sup>a</sup>Gender coded as 1 = Male, 2 = Female; <sup>b</sup>Income coded as 1 = Below 50,000, 2 = 50,001-100,000, 3 = 100,001-200,000, 4 = 200,001 or more. <sup>c</sup>First Drink refers to the participants' age when they first consumed alcohol; <sup>d</sup>Sponsorship refers to the sponsorship status of the athlete coded as 0 = Not-sponsored, 1 = Sponsored.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Table 3.** Consumption between Athletes Receiving Direct-to-User Forms of Sponsorship

	Non-Sponsored ( <i>n</i> = 334)		Direct-to-User Sponsored ( <i>n</i> = 101)		<i>F</i> (1, 429)	<i>p</i>	partial $\eta^2$
	M	SD	M	SD			
Drinks Last Week	8.52	14.79	8.95	11.42	3.72	.055	.01
12-Months Drinking	5.29	1.84	5.92	1.62	7.71	.006	.02
Drinks on Drinking Day	3.16	1.41	3.33	1.16	0.43	.522	.00
Binge Drinking	3.18	1.75	3.51	1.74	1.21	.272	.00
CAGE	1.68	0.78	1.89	0.76	5.92	.015	.01

  

	Sponsored ( <i>n</i> = 66)		Direct-to-User Sponsored ( <i>n</i> = 101)		<i>F</i> (1, 161)	<i>p</i>	partial $\eta^2$
	M	SD	M	SD			
Drinks Last Week	6.49	7.40	8.95	11.42	2.41	.124	.01
12-Months Drinking	5.85	1.50	5.92	1.62	0.02	.940	.00
Drinks on Drinking Day	3.32	1.25	3.33	1.16	0.04	.881	.00
Binge Drinking	3.42	1.60	3.51	1.74	0.03	.868	.00
CAGE	1.67	0.76	1.89	0.76	3.62	.060	.02

\* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001.

**Table 4.** Differences between Sponsored and Non-sponsored Sportspeople on Aspects of Peer Behavior and Team/Club Culture

	Non-Sponsored ( <i>n</i> = 334)		Sponsored ( <i>n</i> = 167)		<i>F</i> (1, 429)	<i>p</i>	$\eta_p^2$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Likelihood of consuming alcohol with peers	4.56	1.37	4.77	1.08	6.95	.009	.01
Consumption has increased since joining team/club	3.01	0.86	3.21	0.68	7.10	.009	.01
Concern over their peers' consumption	1.65	0.83	1.87	0.90	3.12	.078	.01
Concern over peers' poor behaviour following consumption	2.38	1.04	2.64	0.95	7.17	.008	.01
Likelihood that peers' would conceal consumption	2.16	1.12	2.49	1.29	8.37	.004	.02
Likelihood that peers' would conceal sponsorship effects on consumption	2.06	1.21	2.22	1.24	2.03	.158	.00
Team/club admiration of non-drinkers	3.15	0.71	3.15	0.77	0.02	.909	.00
Team/club rules about consumption enforced	2.64	1.22	2.66	1.14	0.04	.848	.00

**Table 5.** Correlations between Sponsored Athlete’s Perceptions of Aspects of Sponsorship and their Consumption

Question	<i>Prior Week Consumption</i>	<i>Disordered Consumption</i>
Prior use of sponsor’s product	.10	.13
Like sponsor’s product	.18*	.16
Choose sponsor product	-.09	.08
Player’s owe sponsors support	-.12	.26**
Player’s perceive expectations to drink sponsor’s product	-.06	.30***
Player’s perceive expectations to drink at sponsor’s establishment	.12	.30***
Sponsorship changes personal consumption	.11	.25**
Sponsorship changes other player’s consumption	-.10	.06
General impact on consumption	-.16*	.24**
Sponsorship changes accessibility	-.15	.12
[Player] Can drink because they work hard	.20*	.03
[Player] Drinks to deal with poor performance	.03	.32***
[Player] Perceives pressure from teammates to drink	.13	.21**
No problems with alcohol sponsorship in sport	.25**	-.04
Alcohol sponsorship in sport should be banned	-.21**	.10

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$